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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,577	01/24/2002	Naohiro Hirose	KON-1707	5337

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EXAMINER

RODEE, CHRISTOPHER D

ART UNIT PAPER NUMBER

1756

DATE MAILED: 01/29/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,577

Applicant(s)

HIROSE ET AL.

Examiner

Christopher D RoDee

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 2-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-8 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1 and 6-8 (added by a supplemental preliminary amendment after restriction), drawn to a toner, classified in class 430, subclass 110.3.
- II. Claim 2, drawn to a method of making the toner, classified in class 430, subclass 137.1.
- III. Claims 3-5, drawn to methods of using a toner, classified in class 430, subclass 120.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as suspension polymerizing monomer droplets containing a colorant in a liquid medium to form substantially spherical particles followed by distorting the shape of the droplets by either agitating the polymerized particles under the influence of heat in a wet mill or by heating the toner in a liquid medium and passing the heated toner through openings smaller than the diameter of the substantially spherical particles.

Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product

Art Unit: 1756

as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process such as writing an electrostatic latent image on a non-photosensitive dielectric surface, developing the latent image with the toner, and fusing the toner image on the dielectric surface.

Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as in the alternative ionographic processes noted above. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Don Lucas on 21 January 2003 a provisional election was made with traverse to prosecute the invention of group I, claims 1 and 6-8. Affirmation of this election must be made by applicant in replying to this Office action. Claims 2-5 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

Claim 1 is objected to because of the following informalities: the period for the claim appears before the end of the claim. That is, there is a period before the formula SF-1 and SF-2. Appropriate correction is required.

Art Unit: 1756

Claim Rejections - 35 USC §§ 102 & 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ugai *et al.* in US Patent 5,698,354.

Ugai discloses a toner comprising a binder resin and a colorant and having relationships SF-1 and SF-2 that are determined in the same manner as the instant invention. See Ugai col. 6, l. 43-58. The size distribution of the toner is measured in the manner discussed beginning at column 17, line 31. The toner should have a variation coefficient in the number-average size distribution of 35 % or less. This value is calculated as $(A) = [S/D_1] \times 100$ (col. 18, l. 6). The reference specifically teaches that toner particle sizes of less than 1 μm are undesirable because they cause fog in the produced image (col. 17, l. 36-42).

Cyan Toner 12 has a weight-average particle diameter of 7.4 μm , (A) of 28%, SF-1 = 170 and SF-2 = 130. This provides a value of SF-1/SF-2 of 1.31. The claims specify the number of particles having a circle corresponding diameter of 0.60 to less than 1.00 μm .

Art Unit: 1756

Assuming the number-average particle diameter and the weight-average particle diameter are nearly the same value and given that $(A) = [S/D_1] \times 100$, $S = (A)D_1/100$. For this toner, $S = (28) \times 7.4 / 100$, or $2.07 \mu\text{m}$. This means that there are about three standard deviations between the average size of $7.4 \mu\text{m}$ and $1.0 \mu\text{m}$ (i.e., $7.4 - (3 \times 2.07 \mu\text{m})$). Typically, three standard deviations encompass 99.7 % of the total number of items in a Gaussian curve. Thus, the toner with sizes from $1.19 \mu\text{m}$ to $13.61 \mu\text{m}$ is 99.7 % of the toner particles. Because there are only 0.3 % of the total toner particles outside the size range of three standard deviations, the amount of particles having a circle corresponding diameter of 0.60 to less than $1.00 \mu\text{m}$ would inherently be less than 5.0 % by number in the reference.

The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 195 USPQ 430, 433 (CCPA 1977). "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." *In re Fitzgerald*, 205 USPQ 594, 596 (CCPA 1980). Because the Examiner has provided soecific reasons based on the evidence record to expect the Cyan Toner of Tyagi to have the claimed variation coefficient, the burden of proof is properly shifted to applicants to prove otherwise.

Claims 1 and 6-8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hashimoto *et al.* in US Patent 5,948,584.

Hashimoto discloses Toner E comprising a binder resin and a colorant and has a SF-1 = 135, SF-2 = 114, and a number basis particle size distribution (A_{NV}) of 27 % (col. 31, Table 3). SF-1, SF-2, and (A_{NV}) are all computed in the same manner as Ugai (above) and in the instant

Art Unit: 1756

specification. See Hashimoto col. 13, l. 34 - col. 14, l. 17; col. 14, l. 47-67. This toner has SF-1/SF-2 of 1.18.

The instant claims specify the number of particles having a circle corresponding diameter of 0.60 to less than 1.00 μm . Assuming the number-average particle diameter and the weight-average particle diameter are nearly the same value and given that $(A) = [S/D_1] \times 100$, $S = (A)D_1/100$. For this toner, $S = (27) \times 6.2 / 100$, or 1.67 μm . This means that there are about three standard deviations between the average size of 6.2 μm and 1.0 μm (i.e., $6.2 - (3 \times 1.67 \mu\text{m})$). Typically, three standard deviations encompass 99.7 % of the total number of items in a Gaussian curve. Thus, the toner with sizes from 1.19 μm to 11.21 μm is 99.7 % of the toner particles. Because there are only 0.3 % of the total toner particles outside the range, the amount of particles having a circle corresponding diameter of 0.60 to less than 1.00 μm would inherently be less than 5.0 % by number.

The other toners produced by the reference are similarly applicable. See Toners A and B as pertinent to claims 1 and 6, and Toners C and D as pertinent to claims 1, 6, and 7. Toner E is pertinent to all rejected claims.

See the citations to *In re Best* and *In re Fitzgerald* above as they are pertinent to this rejection.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ugai *et al.* in US Patent 5,698,354.

Ugai was described above. The exemplified toner does not disclose a SF-1 value within the scope of claims 7 and 8. However, the reference teaches that SF-1 can vary between 100 and 180 (Abstract), particularly between 100 and 140 (col. 7, l. 29-34), and the value of SF-2 can vary between 100 and 140, preferably 100 and 120. As noted above, the reference

Art Unit: 1756

specifically teaches that toner particle sizes of less than 1 μm are undesirable because they cause fog in the produced image (col. 17, l. 36-42).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a value for SF-1 and SF-2 within the scope of the claims, such as SF-1 of 120 and SF-2 of 110 (i.e., the midpoint of each range) while minimizing the number of particles below 1 μm because the reference teaches that toner particles below 1 μm have deleterious effects and the artisan would have been expected to prepare the toner with SF-1 and SF-2 values within the scope of the preferred values, such as midway within each preferred range.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references show toners with specific combinations of SF-1 and SF-2 parameters. It appears that these references are not as close to the claimed invention as the applied references.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher D RoDee whose telephone number is 703 308-2465. The examiner can normally be reached on most weekdays from 6 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703 308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Art Unit: 1756

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0661.

A handwritten signature in black ink, appearing to read 'CR', with a stylized flourish extending to the right.

cdr
January 21, 2003

**CHRISTOPHER RODEE
PRIMARY EXAMINER**